Public Page for Quarter Ending May 31, 2010

Project WP#339: Structural Significance of Mechanical Damage

Background

The primary objective of the project is to establish a detailed experimental database to support the development and validation of improved burst and fatigue strength models for assessing the interaction of mechanical damage with secondary features (gouges, corrosion, and welds). The data will be used to develop and validate mechanistic models which will produce reliable tools to assess a wide range of mechanical damage forms. This will improve safety, reduce unnecessary maintenance, and support the improvement of pipeline standards and codes of practice.

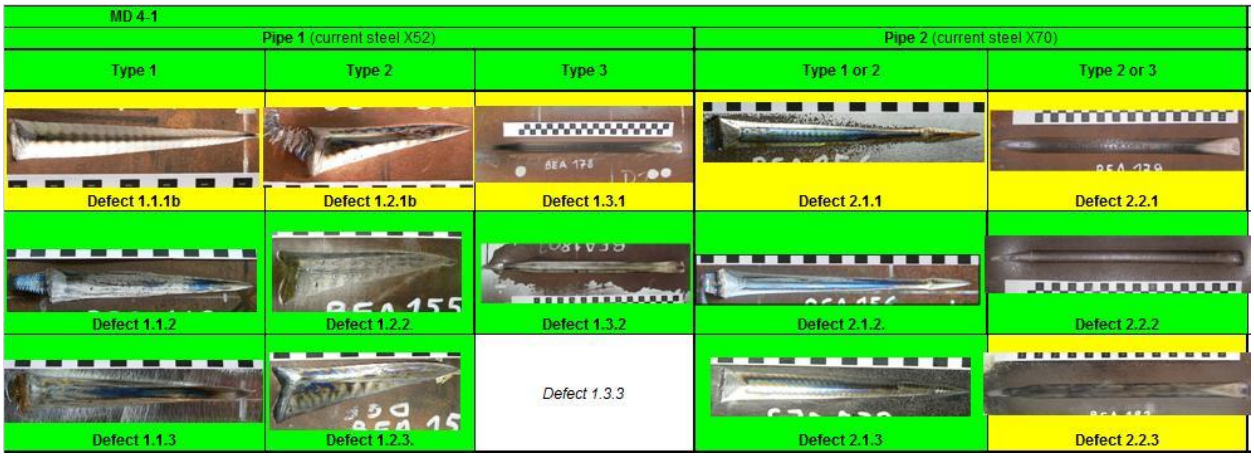
Progress in the Quarter

BMT has begun the testing of dents interacting with simulated corrosion features and will present updates in the next quarter.

BMT has developed a cutting plan for the vintage "SoCal" pipe being used in the extended project matrix previously approved by the project team. The plan includes sufficient material to fabricate all of the required specimens along with sufficient material to use in the detailed material characterization program.

The table below summarizes the progress of the task on "Dent and Gouge" defects for the entire program. The background color in the table represents:

- White: Defects not yet created
- Yellow: Defects already created but not yet investigated or submitted to either Burst or Fatigue tests
- Green: Defects created and tests completed



- GDF SUEZ continued the tests on dents and gouges during this reporting period with the following results:

- GDF SUEZ created Defect 2.2.3 with slower aggression and low internal pressure, (20 bars) to promote deep denting in the range of 5%.

- GDF SUEZ performed burst tests on defects 1.3.2 and 2.2.2 with additional instrumentation in order to video the longitudinal profile of severe dent versus the increase of pressure